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10/575,410

04/07/2006

Ku-Bong Min

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3773

35884

7590

09/22/2008

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EXAMINER

CHAU, PETER P

ART UNIT

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4144

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/575,410	Applicant(s) MIN, KU-BONG	
	Examiner PETER CHAU	Art Unit 4144	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/7/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-20 have been examined and are pending.

Information Disclosure Statement

2. No Information Disclosure Statement (IDS) has been filed.

Specification

3. The use of the trademark UPnP has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Objections

4. Claims 1, 3, 9, 11, 12, 13, 16 and 18 are objected to because of the following informalities: requesting routing tables to.... Appropriate correction is required. The examiner will assume "to" to be "from" hereinafter.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claims 9 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase “can be operated as a gateway” is indefinite for the recitation of the word “can”. The examiner will assume that the device may or may not be a gateway during the examination.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1, 7-8, 18 and 20** are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,710,885 to Bondi (hereinafter “Bondi”).

As per claim 1, Bondi teaches a method for automatically setting a network, comprising the steps of (col. 1 lines 10-11):

receiving an event message from a device connected to a network (col. 4 line 62, discloses a device receiving a message from a discovered/known node (device) connected in a network);

requesting routing tables to all devices connected to the network except for the device (col. 7 lines 27-29, discloses retrieving router tables from various devices on the network); **and**

adding an IP address of the device to the routing tables of the devices (col. 8 lines 9-10, discloses updating the IP topology database).

As per claim 7, Bondi teaches the method of claim 1, wherein, the event message is an IP network management event message (col. 1 lines 36-41, discloses using Simple Network Management Protocol (SNMP) for defining management information in a network).

As per claim 8, Bondi teaches the method of claim 1 further comprising, when one IP address has been registered in the IP address information of the event message from the device, a step for deleting the IP address of the device added to the routing tables (col. 4 lines 58-59, discloses an IP address of the discovered/known device in a received message; col. 8 lines 9-10, discloses updating the IP topology database),

As per claim 18, Bondi teaches a method for automatically setting a network, comprising the steps of (col. 1 lines 10-11):

receiving an event message from any one of devices connected to a network consisting of heterogeneous IP segments (col. 4 line 62, discloses a discovered/known device receiving a message from a device connected in a network; col. 5 lines 1-2, discloses about different networks connected together that contains devices within them).

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requesting routing tables to all devices connected to the network except for the device transmitting the event message (col. 7 lines 27-29, discloses retrieving router tables from various devices on the network); **and adding an IP address of the device to the routing tables of the devices** (col. 8 lines 9-10, discloses updating the IP topology database).

As per claim 20, Bondi teaches the method of claim 18, wherein the event message is an IP network management event message (col. 1 lines 36-41, discloses using SNMP for defining management information in a network).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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9. **Claims 2-6** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,710,885 to Bondi as applied to claim 1 above, and further in view of “A Secure Service Discovery Protocol for MANET.” to Yuan et al. (hereinafter “Yuan”).

As per claim 2, Bondi teaches the method of claim 1. Bondi does not disclose, but Yuan teaches further comprising, when two or more IP addresses have been registered in IP address information of the event message, a step for confirming whether unicast and multicast forwarding functions are supported through the event message (Yuan, page 503 right column 1st paragraph, discloses a message contains URLs (two or more IP addresses) and also points to an XML file that provides a description of services (i.e. multicast and unicast forwarding service).

Bondi disclose that his invention may be modified with a different network configuration (col. 4 lines 50-54). The use of UPnP is to enable simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph). It is well known in the art at the time of the invention that when a UPnP device wants to know more about services offered from a UPnP device, it would retrieve the XML document from the UPnP device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bondi's invention with the UPnP protocol found in Yuan to enable simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph).

As per claim 3, Bondi further in view of Yuan teaches the method of claim 2. While Bondi discloses the step for requesting the routing tables requests the routing tables to all devices except for the device transmitting the event message (col. 7 lines 27-29, discloses retrieving router tables from various devices on the network), Bondi does not disclose when the unicast and multicast forwarding functions are supported.

However, Bondi discloses polling of failed nodes due to the increasing number of nodes in a network. This would then cause discovery of nodes by polling to be delayed (col. 3 lines 16-22). By enabling unicast and multicast forwarding functions adds reliability to the network. When a source device wants to send data to a destination device, but the connection is disabled, the source device can send it to a device with multicast/unicast forwarding functions to forward information to the destination device so the data can still be transmitted even though the connection between source and destination address is disabled.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bondi's invention to have multicast and unicast forwarding function to add reliability to the network.

As per claim 4, Bondi teaches the method of claim 1. While Bondi discloses when one IP address have been registered in the IP address information of the event message, the step for adding the IP address of the device adds the IP address of the device to the routing tables (col. 4 line 62, discloses a device

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receiving a message with one IP address from a discovered/known device connected in a network; col. 8 lines 29-10, discloses updating the IP topology database), **Bondi does not disclose, when two or more IP addresses have been registered in the IP address information of the event message.**

However, a message containing multiple IP address would lead to an increase in efficiency because when multiple messages goes to the same destination, it would be efficient to send it in one message that contains the IP address for each of the message.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bondi's invention to increase efficiency when sending messages to the same destination.

As per claim 5, Bondi teaches the method of claim 1, wherein, when the IP address of the device has not been registered in the routing tables, the step for adding the IP address of the device adds the IP address of the device to the routing tables (col. 8 lines 29-10, discloses updating the IP topology database).

Therefore, it would have been obvious that adding the IP address to the routing tables as taught by Bondi would have meant the IP address was not registered in the routing tables in the beginning.

As per claim 6, Bondi teaches the method of claim 1. While Bondi discloses wherein the device and the devices are connected to a network consisting of

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heterogeneous IP segments (col. 5 lines 1-12, discloses about different networks connected together that contains devices within them), **Bondi does not disclose, but Yuan teaches a UPnP-based network** (Yuan, page 503 right column 1st paragraph, discloses devices using UPnP technology in a network).

Bondi disclose that his invention may be modified with a different network configuration (col. 4 lines 50-54). The use of UPnP enables simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bondi's invention with Yuan's UPnP-based network to enable simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph).

10. **Claim 9 and 10** rejected under 35 U.S.C. 103(a) as being unpatentable over Bondi and in further view of Yuan.

As per claim 9, Bondi teaches a method for automatically setting a network, comprising the steps of (col. 1 lines 10-11):

receiving an event message from a UPnP device connected to a UPnP-based network (col. 4 line 62, discloses a device receiving a message from a discovered/known device connected in a network);

requesting routing tables to all UPnP devices connected to the network except for the UPnP device (col. 7 lines 27-29, discloses retrieving router tables from various devices on the network); **and**

adding an IP address of the UPnP device to the routing tables of the UPnP devices, so that the UPnP device can be operated as a gateway (col. 8 lines 9-10, discloses updating the IP topology database; col. 4 line 61, discloses the device can be a router).

As regards to the UPnP, Bondi disclose that his invention may be modified with a different network configuration (col. 4 lines 50-54). The use of UPnP enables simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bondi's invention with the use of UPnP because UPnP enable simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph).

As per claim 10, the combination of Bondi and Yuan teaches the method of claim 9, wherein, the event message is an IP network management event message (col. 1 lines 36-41, discloses using SNMP for defining management information in a network).

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11. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bondi and in further view of Yuan.

As per claim 11, Bondi teaches a method for automatically setting, a network, comprising the steps of (col. 1 lines 10-11):

receiving an event message from a UPnP device discovered among UPnP devices connected to a UPnP-based network system (col. 4 line 62, discloses a device receiving a message from a discovered/known device connected in a network).

requesting routing tables to all UPnP devices except for the discovered UPnP device (col. 7 lines 27-29, discloses retrieving router tables from various devices on the network); **and**

While Bondi discloses when one IP address have been registered in the IP address information of the event message, adding the IP address of the discovered UPnP device to the routing tables, so that the discovered UPnP device can be operated as a gateway (col. 4 line 62, discloses a device receiving a message with one IP address from a discovered/known device connected in a network; col. 8 lines 29-10, discloses updating the IP topology database; col. 4 line 61, discloses the discovered/known device can be a router), **Bondi does not disclose, when two or more IP addresses have been registered in the IP address information of the event.**

However, a message containing multiple IP address would lead to an increase in efficiency because when multiple messages goes to the same destination, it would be

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efficient to send it in one message that contains the IP address for each of the message.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bondi's invention to increase efficiency when sending messages to the same destination.

wherein the event message is an IP network management event message (col. 1 lines 36-41, discloses using SNMP for defining management information in a network).

As regards to the UPnP, Bondi disclose that his invention may be modified with a different network configuration (col. 4 lines 50-54). The use of UPnP devices enables simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bondi's invention with the use of UPnP because UPnP enable simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph).

12. **Claims 12-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bondi and in further view of Yuan.

As per claim 12, while Bondi disclose in a network system having two or more devices and one or more control points, a method for automatically setting

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a network (col. 3 lines 31-32, discloses a plurality of devices and at least one network management device (control point); col. 1 lines 10-11, discloses setting a network),

Bondi does not, but Yuan discloses UPnP devices and UPnP-based home

network system (Yuan, page 503 right column 1st paragraph, discloses UPnP devices in a UPnP-based network).

Bondi disclose that his invention may be modified with a different network configuration (col. 4 lines 50-54). The use of UPnP devices enables simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bondi's invention with the use of UPnP because UPnP enable simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph):

receiving an event message from a discovered UPnP device (col. 4 line 62, discloses a device receiving a message from a discovered/known device connected in a network).

While Bondi discloses when one IP address have been registered in the IP address information of the event message, requesting routing tables to all UPnP devices except for the discovered UPnP device (col. 4 line 62, discloses a device receiving a message with one IP address from a discovered/known device connected in a network; col. 7 lines 27-29, discloses retrieving router tables from various devices on

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the network), **Bondi does not disclose, when two or more IP addresses have been registered in IP address information of the event message.**

However, a message containing multiple IP address would lead to an increase in efficiency because when multiple messages goes to the same destination, it would be efficient to send it in one message that contains the IP address for each of the message.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bondi's invention to increase efficiency when sending messages to the same destination.

adding the IP address of the discovered UPnP device to the routing tables (col. 8 lines 9-10, discloses updating the IP topology database).

As regards to the UPnP, Bondi disclose that his invention may be modified with a different network configuration (col. 4 lines 50-54). The use of UPnP devices enables simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bondi's invention with the use of UPnP because UPnP enable simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph).

As per claim 13, Bondi teaches the method of claim 12, further comprising, when one IP address has been registered in IP address information of the event

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message, a step for requesting the routing tables to all UPnP devices except for the discovered UPnP device and deleting the IP address of the discovered UPnP device from the routing tables (col. 4 lines 58-59, discloses an IP address of the discovered/ known device in a message; col. 7 lines 27-29, discloses retrieving router tables from various devices on the network; col. 8 lines 9-10, discloses updating the IP topology database).

As regards to the UPnP, Bondi disclose that his invention may be modified with a different network configuration (col. 4 lines 50-54). The use of UPnP devices enables simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bondi's invention with the use of UPnP because UPnP enable simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph).

As per claim 14, Bondi teaches the method of claim 12. While Bondi teaches, further comprising, when the IP address of the discovered UPnP device is added to the routing tables and the discovered UPnP device is operated as a gateway (col. 8 lines 9-10, discloses updating the IP topology database; col. 4 line 61, discloses the discovered/known device can be a router), **Bondi does not disclose a step for invoking unicast/multicast forwarding from the discovered UPnP device.**

However, Bondi discloses polling of failed nodes due to the increasing number of nodes in a network. This would then cause discovery of nodes by polling to be delayed (col. 3 lines 16-22). By enabling unicast and multicast forwarding functions adds reliability to the network. When a source device wants to send data to a destination device, but the connection is disabled, the source device can send it to a device with multicast/unicast forwarding functions to forward information to the destination device so the data can still be transmitted even though the connection between source and destination address is disabled.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bondi's invention to have multicast and unicast forwarding function to add reliability to the network.

As regards to the UPnP, Bondi disclose that his invention may be modified with a different network configuration (col. 4 lines 50-54). The use of UPnP devices enables simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bondi's invention with the use of UPnP because UPnP enable simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph).

As per claim 15, Bondi teaches the method of claim 14. Bondi does not teach further comprising, when the unicast/multicast forwarding is not invoked, a step for receiving the event message again.

However, it is known to one of ordinary skill in the art at the time of the invention that in order to get reliability in a system to obtain desired results, retrying the whole process is necessary.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to receive the message again when unicast/multicast forwarding is not invoked to get reliability in a system.

As per claim 16, Bondi teaches the method of claim 14, further comprising, when the discovered UPnP device is not operated as the gateway, a step for requesting the routing tables to all UPnP devices except for the UPnP device and deleting the IP address of the UPnP device from the routing tables (col. 4 line 61, discloses the device can be a computer; col. 7 lines 27-29, discloses retrieving router tables from various devices on the network; col. 8 lines 9-10, discloses updating the IP topology database).

As regards to the UPnP devices, Bondi disclose that his invention may be modified with a different network configuration (col. 4 lines 50-54). The use of UPnP devices enables simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bondi's invention with the protocol of UPnP because UPnP enable simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph).

As per claim 17, Bondi teaches the method of claim 12, wherein the IP address of the discovered UPnP device is added to or deleted from the routing tables, when the control point invokes UPnP service actions (col. 1 lines 55-57, discloses a management device discovering nodes; col. 8 lines 9-10, discloses updating the IP topology database).

As regards to the UPnP, Bondi disclose that his invention may be modified with a different network configuration (col. 4 lines 50-54). The use of UPnP devices enables simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bondi's invention with the use of UPnP because UPnP enable simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph).

13. **Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bondi as applied to claim 18 above, and further in view of Yuan.

As per claim 19, Bondi teaches the method of claim 18. Bondi does not, but Yuan teaches wherein the network is a UPnP-based network (Yuan, page 503 right column 1st paragraph, discloses devices using UPnP technology in a network).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bondi's invention with Yuan's UPnP-based network to enable simple and robust connectivity among stand-alone devices and PCs from many different vendors (Yuan, page 503 left column 5th paragraph).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 7,096,490 Xiong et al. Teaches heterogeneous networks communicating with each other using a router with auto-configuration feature.

U.S. Patent 7,283,544 Johnson et al. Teaches automatic IP address management.

U.S. Patent 5,835,720 Nelson et al. Teaches discovering devices in a network.

U.S. Patent 6,167,444 Boden et al. Teaches a transmission of data using a gateway connected to other network devices.

U.S. Patent 6,621,820 Williams et al. Teaches updating a routing table on a device connected to other devices.

U.S. PGPub 2005/0117525 A1 Poustchi et al. Teaches the peer notifying other peers of its connection to the network.

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U.S. PGPub 2003/0056008 A1 Russell et al. Teaches a method of automatically assigning an IP address to a device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PETER CHAU whose telephone number is (571)270-7152. The examiner can normally be reached on Monday-Friday 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Taghi Arani can be reached on 571-242-3787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. C./
Examiner, Art Unit 4144

/Taghi T. Arani/

Supervisory Patent Examiner, Art Unit 4144